

REMARKS

Claims 1-13 and 16-19 were previously pending in this application.

Claims 14-15 stand withdrawn.

Claims 1-12 stand rejected.

Claims 16-19 are allowed.

Claims 3 and 13 are objected to.

New claims 20 and 21 are added to recite limitations drawn from allowable claims 3 and 13, respectively.

Claim 13 is amended to change its dependency from claim 1 to claim 5 for proper claim dependency.

No new matter is added.

Claims 1-13 and 16-21 remain in the case.

Applicant requests reconsideration and allowance of the claims in light of the above amendments and following remarks.

Allowable Subject Matter

Applicants thank the Examiner's indication that claim 3 and 13 would be allowable if rewritten in independent form including all of the limitations of the base claims and intervening claims.

Interview with the Examiner

Through a telephone conference with the Examiner James Mitchell on June 5, 2003, Applicant inquired about inconsistency in the final office action that claim 3 was indicated as both rejected and allowable. The Examiner Mitchell confirmed, in the interview summary dated June 18, 2003, that the rejection on claim 3 was in fact in error and that the indicated allowability was correct. Applicant thanks the Examiner's indicated allowability.

Claim Rejections - 35 USC § 103

Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art (APA).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in combination with Japanese Patent No. 02-039442 to Mutsuo ("Mutsuo").

Claims 5, 6, 8 and 10-12, are rejected under 35 U.S.C. 103(a) as being unpatentable over APA as applied to claim 5 and further in view of Japanese Patent No. 356115548 to Takehara ("Takehara").

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA and Takehara as applied to claim 5 and further in view of U.S. Patent No. 5,293,511 to Poradish et al., ("Poradish").

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA and Takehara as applied to claim 5 and further in view of Japanese Patent No. 401053795 to Shoji ("Shoji").

The rejections are respectfully traversed.

In the official action dated April 9, 2003, the Examiner acknowledges that AAPA does not appear to teach "removing the photoresist after the interconnection." However, the Examiner then goes on to say that, "in any case, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose the particular claimed sequence because applicant has not disclosed that the limitation is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical."

Applicant respectfully submits that this is nothing more than an "obvious to try" argument. That is, the Examiner is essentially arguing that it would have been obvious to try removing the photoresist after the interconnection. However, this is simply not the standard for an obviousness determination under 35 U.S.C. 103(a). A determination that something is obvious under Section 103 has been held to be error where what would have been obvious to try would have been to vary all parameters or try each of numerous different possible choices where the prior art gave no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful. *In re O'Farrell*, 7 USPQ2d 1673, 1681 (CAFC 1988). Here, nowhere does APA teach or suggest the claimed combinations including removing the photoresist after the interconnection or removing the photoresist from the semiconductor chips after the electrically interconnecting the bond pads to the base substrate.

Furthermore, there are numerous instances throughout the instant application which discuss the benefit of removing the photoresist after the interconnection. For example, at page 7, lines 20-21 of the instant application, it is stated that "[s]ince the mirrors 116 of the semiconductor chips 112 are coated with the photoresist 113, damage to the mirrors 116 by contaminants such as silicon particles during the wafer sawing process can be prevented." Such

damage to the mirrors by contaminants is one of the problems of APA and is overcome by the embodiments of the claimed invention.

Also, page 7, line 23-page 8, line 6 of the instant application discusses the delamination problem of the APA, in which a step of removing the photoresist normally follows the washing step, and explains the effect of the claimed invention, i.e., "since the mirrors 116 of the semiconductor chip are coated with the photoresist 113, although the die-attaching step is carried out at a high temperature, the mirrors 116 of the semiconductor chips are not damaged."

In addition, it is stated at page 8, lines 15-17 of the instant application that "[t]he photoresist 113 is not removed until after the wire-bonding step. This prevents the contamination of the mirrors 116 due to dust or moisture."

None of these effects of the claimed invention cannot be achieved with the teachings disclosed in APA.

Thus, the cited references, either alone or in combination, do not teach or suggest the claimed combinations of claim 1. Accordingly, the rejection does not present a *prima facie* case of obviousness. Thus, the rejection of claim 1 under 35 U.S.C 103 is improper. Therefore, claim 1 is allowable and claims 2 and 4, which depend therefrom and recite features that are neither taught nor disclosed in the cited references, are also allowable.

Also, for the reasons discussed above, claim 5, which recites limitations similar to claim 1, and claims 6-12, which depend from allowable claim 5 and recite features that are neither taught nor disclosed in the cited references, are also allowable.

For the foregoing reasons, reconsideration and allowance of claims 1-13 and 16-21 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.



Alan T. McCollom
Reg. No. 28,881

MARGER JOHNSON & McCOLLOM, P.C.
1030 SW Morrison Street
Portland, OR 97205
503-222-3613